COLEOPTERA[1]

FROM THE WILLIAMS GALAPAGOS EXPEDITION

By Andrew J. Mutchler

(Figs. 42–46 incl.)

The first records of Coleoptera from the Galapagos Islands were based on specimens collected by Charles Darwin while on the famous 'Beagle' Expedition. There were twenty-nine species in the series, one of which was described as new by the Reverend F. W. Hope (1837). The remainder were reported on by Mr. George R. Waterhouse (1845). He erected three new genera for forms which could not be placed in the then known genera and described twenty-two species as new. Of the other six species he made the following remarks: "But four species amongst the Galapagos Coleoptera occur, so far as I have been able to ascertain, in any other quarter, and of these, two (*Dermestes vulpinus* and *Corynetes rufipes*[2]) are insects which, feeding upon dried meat and such substances, have been carried to all parts frequented by ships; the third is a wood feeding insect (genus *Apate*), and might be transported for a considerable distance by floating timber; and the fourth is a water-beetle which appears to me clearly identical with *Hydrophilus lateralis* (genus *Tropisternus* of Solier), an insect found in the United States, Mexico, and some of the West Indian islands. I should observe, moreover, there is in the collection a second, minute, species of *Hydrophilus* closely resembling the *Philhydrus affinis* of our English collections, but which is rather smaller, less distinctly punctured, and of a darker hue." The above refers to five of the species; of the sixth, which is a staphylinid, he says: "Three specimens found under a dead bird in Chatham Island. These specimens approach very nearly in size and form *Cr[eophilus] maxillosus* of Europe, and the *C. villosus* of North America."

These islands were visited again in 1852 by members of the Swedish frigate 'Eugenie' and from the Coleoptera obtained during their stay, Boheman (1858–1859) described six new species; but, if any of the species collected by Darwin were among this material, records of them were not included in the account. The visit of H.M.S. 'Petrel,' in 1875, brought forth additional records of the Coleopterous fauna of these islands. The beetles collected on this

[1] Cont. Department, Trop. Research No. 186.

[2] *Necrobia rufipes.*

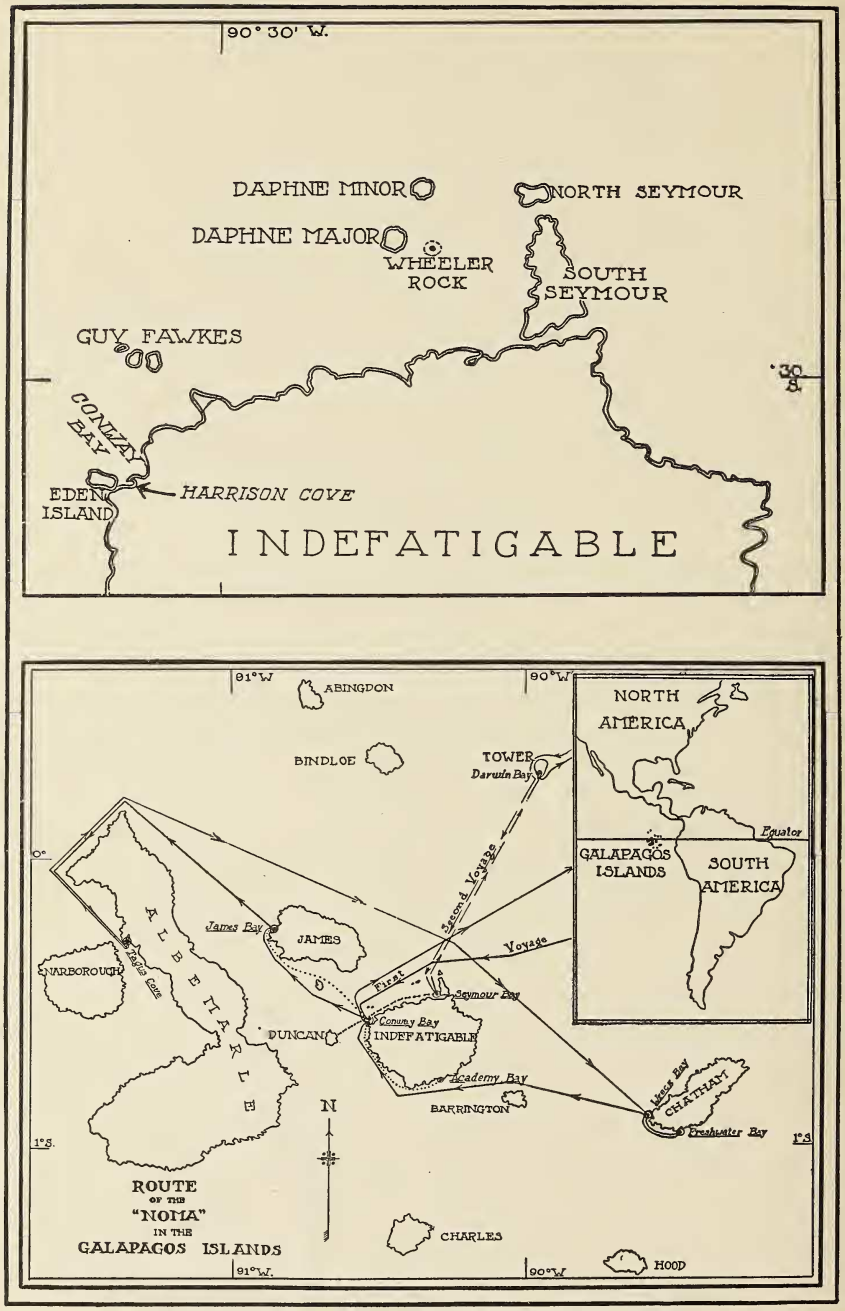

Plate A. **SKETCH MAP OF GALAPAGOS ISLANDS**
Route of the *Noma*, and details and location of the Archipelago.

expedition were treated by Mr. Charles Waterhouse (1877)[3] who described three new genera and six new species. He also lists the species known to him to have occurred in these islands and cites, when known, the particular islands on which they were collected. The list contains thirty-nine described species and one questionable form of *Philhydrus*. The next records were by Dr. L. O. Howard (1890) who, in an "Annotated Catalogue of the Insects Collected in 1887–1888, by naturalists of the U. S. Fish Commission, Steamer 'Albatross,'" lists nine species with the specific names. One of these, *Calosoma galapagoum* Hope, was found to be incorrectly determined as the form described by Hope, and was later treated as a new species by Linell. Dr. Howard also included a questionable species of *Mallodon* and mentions three unidentified specimens of Curculionidae. The species listed by Dr. Howard were determined by Martin Linell. The undescribed species contained in the above material were treated by Linell (1898) who also included the results of another 'Albatross' Expedition in 1891 and the collection made by Dr. G. Baur of Clark University during the same year. In the paper by Linell, which was printed posthumously, there are fourteen species described as new and six previously described species not included in former papers. There are also references with notes to species which had been recorded from the islands by Hope, Geo. R. Waterhouse, Boheman, and Howard.

There is also a record by F. X. Williams (1907) of the Expedition of the California Academy of Science, in which a list of the families of beetles, collected by that expedition, are given. The account is as follows: "Coleoptera, 150 species; one nocturnal species of *Cicindela; Calosoma* plentiful; Dytiscidae, 5 species; Gyrinidae, 1 species; Hydrophilidae, 1 species; few Staphylinids were found on rotting cactus and carrion; Coccinellidae, 3 species; Dermestidae were common; Histeridae not common; Elateridae, 5 species; Buprestidae, one small species; Cleridae, 1 species; several Ptinids; Scarabaeidae, 2 species—one a *Trox;* Cerambycidae, 10 species; Chrysomelidae, 2 small species; Tenebrionidae were common. Rhyncophora numerous." He also states that Coleoptera were abundant in cereals, especially on the vessel. The specimen of *Cicindela* mentioned in the above article was listed by Dr. Walther Horn in 'Genera Insectorum' (1915), fasc. 82[c], as *Cicindela galapagoensis* who gives as the authorities "Van Dyke, in litt.; Williams in litt." I believe the

[3] This paper was not included in the records by Martin Linell.

brief description of the species on pp. 238, 241, 251, 397 and 399, given by Dr. Horn in the above publication, are sufficient to establish the species and credit should be given him as the author. There is also a more complete description of the species in Archiv för Zoologi, 1920, XIII, No. 11, p. 17.

I have inquired of Dr. E. C. Van Dyke concerning the material collected by the California Academy of Sciences and have been informed that the above species is the only beetle, of the lot collected by F. X. Williams on the Galapagos Islands, which has been described.

The material before me was collected by the Harrison Williams Galapagos Expedition of the New York Zoological Society under the directorship of William Beebe. It includes twelve forms previously recorded from the islands, one species which is more or less cosmopolitan but not heretofore recorded and eight forms which I am herewith describing as new. It seems remarkable that six of the new species are contained in genera which have not heretofore been recorded from these islands, one of which, apparently, cannot be placed in any previously described genus.

I have also included in the following pages the description of a species of *Calosoma* which was collected by Dr. G. Baur and wrongly determined by Linell.

I wish to thank Mr. William Beebe for his kindness in allowing me the privilege of identifying this material, also to express my gratification to Prof. William Morton Wheeler for notes on the environment of many of the species.

The determination of the species has been greatly facilitated through the courtesy of the U. S. National Museum in allowing me the privilege of comparing specimens with the Linell material and the kindness of Mr. K. G. Blair in comparing specimens with the Waterhouse types in the British Museum.

Calosoma linelli sp. nov.

Calosoma galapageium (Hope) Linell, 1898, *Proc. U. S. Nat. Mus.*, XXI. *p.* 250.

This species was determined as *C. galapageium* Hope by Linell. The one specimen on which this determination was made was later sent to Mr. K. G. Blair of the British Museum, who returned it with the following remarks: "It . . . seems possible that Linell was mistaken as regards *galapageium* as the type is 16 mm. in length, is more shining than the other and does not in the least suggest a *Cychrus*."

The specimen was so fully described by Linell that I believe it better to repeat his diagnosis than to attempt to make a new description:

"Form and size of *Cychrus stenostomus*, apterous, smooth, and very shining. Head black, impunctate, mandibles piceous; labrum and palpi ferruginous. Antennae ferruginous, slightly darker outward, finely rufo-pubescent from the fifth joint, reaching the elytra to one-fourth the length from the base. Thorax black, aeneous at the base, entirely impunctate, slightly wider than long, subcordate, somewhat wider at apex than at base; disk feebly convex, not depressed at the sides; median line distinctly impressed; basal fovae rounded, deep, approximate to the sides; base truncate; posterior angles prolonged and deflexed. Elytra at base slightly wider than the thorax at middle, ovate, one-half longer than broad, dark cupreous green; humeri rounded; disk slightly convex, feebly (at sides and apex obsoletely) punctato-striate; intervals nearly flat, smooth; the third, seventh, and eleventh with feebly convex, elongate elevations, separated by rounded very shallow foveae, each fovea with a couple of punctures. Epipleura and ventral surface reddish brown, smooth. Legs ferruginous; tibiae sparsely and finely spinose, the intermediate ones strongly arcuate (male), expanded at apex, pubescent beneath and prolonged into a spine as long as the spurs; anterior tarsi (male) with the first three joints strongly dilated and densely spongy beneath, the first joint campanulate, the second widest, quadrate, the third strongly transverse, the fourth short, emarginate, two-thirds as broad as the third, with a few small spines and a trace of sponginess beneath, fifth joint narrow, cylindrical. Posterior coxae oval obtuse. Length, 12.5 mm.; width, 5 mm."

The above description was made from one male specimen, collected by Dr. G. Baur on Chatham Island, which I have made the type of the new species *linelli*.

The type and only representative, as far as known, of this new form, is in the collection of the U. S. National Museum.

Calosoma howardi Linell.

One specimen, James Island, April 5, and one, South Seymour, April 23. Running about singly on soil. Both of these specimens are probably females.

This species was described by Linell from ninety-two specimens: two from Duncan Island, twelve from Chatham Island, and seventy-eight from Charles Island. Collected by the Albatross Expedition in 1888 and 1891 and by Dr. G. Baur during 1891. The type of the species is in the U. S. National Museum.

Tachys beebei sp. nov.

(Fig. 42)

Brownish black, antennae slightly longer than the head and thorax, three basal joints testaceous, darker at the extreme apex, fourth joint darker at the apical half, fifth to eleventh dark throughout. Palpi testaceous. Mandibles testaceous, margined with darker. Head narrower than the thorax, black, closely and somewhat finely punctate, labrum darker and more coarsely punctate than other parts of head; frontal grooves extending back beyond the middle of the eye. Pronotum black, subquadrate, wider at apex than base, widest at about the apical third, sides distinctly margined, front angles acute, slightly produced, hind angles obtuse; very finely and obsoletely punctate, basal impression moderately deep and outlined by a single row of punctures which begin at the basal margin about half-way between the angles and the middle and curve slightly towards the center, median impression indistinct, slightly

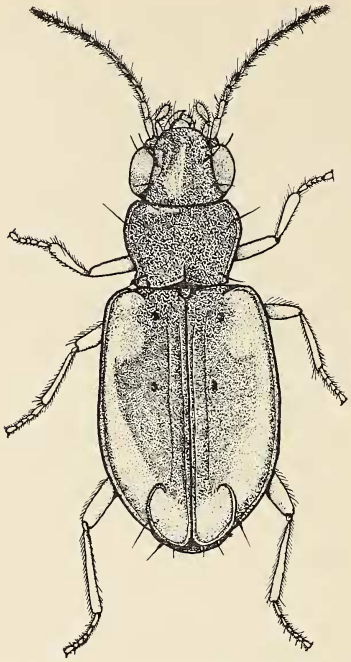

Fig. 42.—*TACHYS BEEBEI* sp. nov.

more distinct basally. Scutellum black. Elytra wider than the thorax, sublateral margins broadly pale, sutural portion black, the black covering about one-half the width of the elytra at the base, then becoming abruptly narrower, covering about one-third the width for the same distance longitudinally, from this point the black color gradually curves outwardly, the widest portion being slightly behind the middle where it again gradually curves inwardly to the suture at about the apical fifth, lateral margin dark to about the apical fifth; finely striate, the two inner striae more or less distinct, first dorsal puncture at the middle, second about one-fifth from the apex. Under surface black. Mouth-parts testaceous. Legs pale testaceous, coxae slightly darker. Length 2.25 mm.

Described from eight examples from South Seymour, April, 1923. Collected under stones in damp mud around pools.

Type No. 28055 and seven *paratypes* No. 28056. Coll. Amer. Mus. Nat. Hist.

Eretes sticticus (Linnaeus).

One specimen collected on Chatham Island, April 7. In small pools among lava blocks.

This species was first listed, under the name *Eunectes occidentalis* Erichson, as occurring in the Galapagos Islands by Charles Waterhouse (1877, p. 77).

The record is as follows: "six examples, which agree very well with the brief description of this species, Hab. Charles Island, Cookson." The species was later listed by Sharp (1882, p. 697) as *Dytiscus sticticus* Linnaeus. It may be well to repeat the following remarks by Dr. Sharp: "Widely distributed in the warmer parts of the Old World, apparently rare in America. It is worthy of note that this species is found in a greater number of islands than any other of the Dytiscidae." Linell, in his paper, did not refer to the species.

Thermonectes basilaris (Harris).

One male and one female specimen. South Seymour, April. In small pools among lava blocks.

These specimens seem to be the same form as that listed by Charles Waterhouse (1877, p. 77) from Charles Island as *Acilius incisus* Aubé var. (a synonym of *Thermonectes basilaris* Harris). The following differences noted by Waterhouse apply also to the specimens which I have before me: "The male agrees perfectly with that of *A. incisus* [*T. basilaris*]. The female differs in having the thorax more punctured, and in having the elongate punctures on the elytra much stronger and more close than in any examples of *incisus* [*basilaris*], and the punctures although diminishing in strength and density, extend nearly to the apex."

I was at first inclined to consider the specimens as representing a new form but, after reading Waterhouse's remarks, I have come to the conclusion that it may be more advisable to consider them as belonging to the above species, as only the female varies from the typical form. I have compared the specimens with examples of *basilaris* in the American Museum collection and find that, although there is considerable variation in the density and depth of the punctures on the thorax and elytra of the females, none are as strongly punctured as in the specimens from the Galapagos.

Tropisternus lateralis Fabricius.

Three specimens, South Seymour, April 23. In small pools among lava blocks.

This species has been recorded from North and South America, including the Antilles, and is abundant in the United States from New York southwards. It is also abundant in Mexico and Central America. Geo. R. Waterhouse recorded the species as collected by Darwin but did not state on what island it was found. Charles Waterhouse records it as collected on Charles Island by Darwin and Cookson and says that it appears to be common in the Galapagos.

Bledius aequatorialis sp. nov.

(Fig. 43)

Male.—Elongate, testaceous. Antennae with basal joint elongate, second and third joints subequal in length, fourth joint shorter, fifth to tenth short, as wide or slightly wider than long, joint eleven longer, basal joints paler than the apical. Mandibles large, with a large tooth on the inner margin slightly before the middle. Head brownish black, front including labrum closely punctate, base more sparsely punctate, basal protuberances of antennae large and extending forward beyond the front margins of the eyes. Pronotum longer than wide, yellowish brown, slightly darker apically, somewhat coarsely

punctate; middle of apex prolongated in a sharp, slightly downwardly curved horn, which reaches over the head slightly beyond the clypeal margin; apical angles narrowly rounded, basal angles very broadly rounded, disk with a narrow median fovae extending from base to apex. Elytra short, a little longer than the

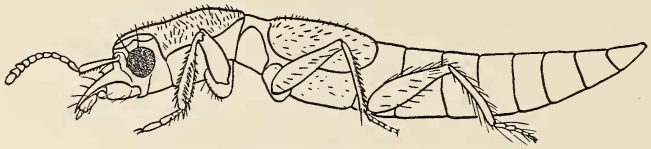

Fig. 43.—*BLEDIUS AEQUATORTALIS* sp. nov.

thorax, yellowish, covered with a very short, fine pubescence. Exposed dorsal segments with somewhat long hairs on the lateral regions and a few scattered hairs on the disk. Under surface and legs pale yellow. Length 4 mm.

Female.—Slightly darker than the male. Antennae not paler basally. Pronotum with apex squarely truncate. Otherwise as in the male. Length 4.5 mm.

Described from two specimens collected under stones in moist mud around pools on South Seymour, April, 1923. Holotype male No. 28057 and allotype female No. 28058. Coll. Amer. Mus. Nat. Hist.

Alloxacis seymourensis sp. nov.

Elongate, chestnut-brown, sparsely covered with a pale pubescence. Right mandible bifid at the tip; apical part especially on the outer margins black, base testaceous. Palpi testaceous, apical joint of the maxillary dilated, triangular. Antennae inserted close to the eyes, testaceous, about one-half the length of the body; first joint clavate, slightly curved outwardly, second joint short, less than one-half the length of the first, third and following joints subequal in length, eleventh joint constricted at the apical half. Head finely and sparsely punctate, basal margin more or less faintly rugose, eyes narrowly emarginate at the front, moderately coarsely granulate; labrum transversely impressed just behind the apical margin. Pronotum widest about the middle, curved at the apical part, more or less oblique behind, being narrowest at the basal margin, basal margins prominent; surface moderately sparsely punctate, pubescence more dense at the sides. Elytra subparallel, indistinctly costate, punctures fine and not very closely placed, pubescence short and fine. Under surface generally slightly darker than the upper, finely and not thickly punctate, pubescence short and fine. Legs paler than the under surface, tibiae on all of the legs with two spurs at the apex, tarsi with fourth joint dilated and spongy beneath, claws with a small tooth at the base. Length 6 mm.

Described from two specimens collected at South Seymour, April 23, on flowers of *Cordia lutea.*

Type No. 28059 and *paratype* No. 28060. Coll. Amer. Mus. Nat. Hist.

This species bears a superficial resemblance to the North American species of *Oxacis,* but on examination I find that the right mandible is bifid. It also has a well-defined, sharp tooth at the base of the claws similar to species of

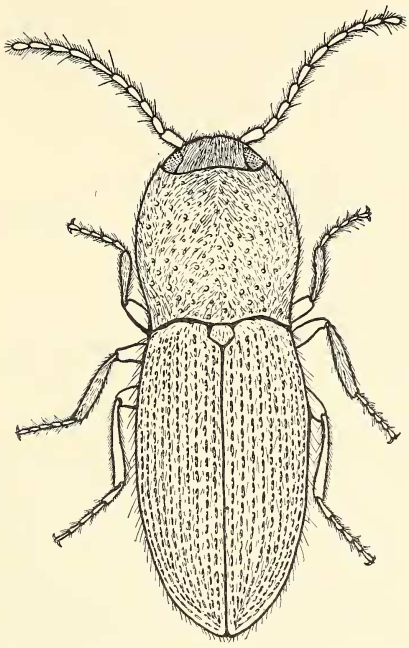

Fig. 44.—*COPTOSTETHUS WILLIAMSI* sp. nov.

the genus *Asclera*, but I have followed Dr. Geo. R. Horn and considered that the species belongs in the genus *Alloxacis* from the fact that the right mandible is bifid and the left entire, which is the only character used in separating the genera *Oxacis* and *Alloxacis*.

Coptostethus williamsi sp. nov.

(Fig. 44)

Female.—Wingless, dark brown, pubescent, with an intermixture of longer erect hairs. Antennae about as long as the head and thorax, serrate from the third joint onward, apex of last joint rounded, first joint thickened and about one-half longer than the second, third joint longer than the second, fourth and following joints shorter than the third and subequal in length. Head moderately finely punctate, inserted in the thorax to beyond the base of the eye. Thorax somewhat sparsely, coarsely punctate, sericeous pilose with large porrectly directed hairs, apical margin produced at the lateral angles, basal margin slightly bisinuate with lateral angles ending in a somewhat acute point, basal incisure strong. Scutellum cordiform. Elytra punctate-striate, each elytron with nine striae, interstices flat, slightly rugose, punctures large, elongate, deep; apical angles conjointly rounded. Underside of thorax coarsely and sparsely punctate. Abdominal segments more finely and more closely punctate. Legs slightly paler than the under surface. Tarsi with joints one to three of

approximately the same length, joints four and five each about two-thirds as long as joint three. Length 3 mm. Width 1.2 mm.

Described from one specimen from South Seymour, collected April, 1923. *Holotype* No. 28061. Coll. Amer. Mus. Nat. Hist.

Necrobia rufipes (De Geer).

One specimen, Tower Island, April 23.

This species is cosmopolitan. It was recorded by Geo. R. Waterhouse, under the generic name *Corynetes*, as collected by Darwin on James Island.

Dermestes carnivorus Fabricius.

Two specimens, South Seymour, April 23.

This species is generally distributed over North and Central America. Linell records one example collected on Chatham Island by the Albatross Expedition in 1891.

Stomion laevigatum Geo. R. Waterhouse.

Twenty-five specimens collected on Daphne Major, April 22, and sixty-nine collected on Tower Island during April. This species was very abundant under stones in bottom of crater and were associated with *Ammophorus obscurus*. Representatives of this lot were sent to Mr. K. G. Blair, of the British Museum, for comparison with the Waterhouse types. The following reply concerning the species was received from Mr. Blair: "Your *Stomion laevigatum* do not quite agree with the type, in which the thorax is more constricted towards the base, and more convex towards the base, i.e. viewed sideways the thorax and elytra make more of an angle; the whole insect is decidedly narrower. The sculpture, however, seems to be identical and it seems that such differences as these are only sexual, at any rate yours seem to be both ♀ and mine both ♂."

After receiving the above reply I examined the specimens which I had determined as this species and find that some of them have the thorax slightly less constricted toward the base or, if viewed sideways, the thorax and elytra make less of an angle. I also find that some specimens are broader than others, but in the whole series I cannot find any difference in sculpture on which to separate them into different forms and therefore believe that they all belong to the above species.

Waterhouse, in the original description, did not mention on which island the species was collected.

Stomion galapagoensis Geo. R. Waterhouse.

There is one specimen collected on South Seymour in soil about roots of the large cactus, April 23, which agrees with the description of the above species in so far as it covers the parts described. The original diagnosis did not make any mention of the legs, which seem to be so different from other species examined that I think it well to give the following short description of them: legs coarsely punctured and with bristles arising from the punctures. The bristles on the femora moderately coarse, those on the tibiae and tarsi intermixed with coarser, and the tarsal ones being relatively coarser than those on the femora or tibiae. Front tibiae with a somewhat decided inward curve on the inner side; middle and hind tibiae straight.

This species was originally described by Waterhouse from two specimens collected by Darwin, but no mention was made to the island on which they were obtained.

Linell records seven examples on Chatham Island, six by the Albatross Expedition, 1888, and one by Dr. G. Baur. I have compared the one specimen collected by the Williams Expedition with those determined by Linell, but our specimen does not agree with them in all respects. Further study and comparison with the type material may show that either the Linell or our material represents a new form.

Ammophorus obscurus Geo. R. Waterhouse.

One hundred and seventy-eight specimens of this species were collected on Daphne Major during the month of April, under stones at the bottom of crater, associated with *Stomion laevigatum*.

I was somewhat doubtful of my determination of this species, from the description, and therefore compared examples with the specimen recorded by Linell as collected on southern Albemarle Island and found that it was an entirely different form. This led me to send a representative of our lot to Mr. K. G. Blair, of the British Museum, with the request that he compare them with the Waterhouse types. The following reply was received from Mr. Blair: "*Ammophorus obscurus* is correctly determined. If you can let me see one of the Linell specimens I shall be glad to compare it with the type of other species." The Linell specimen was later submitted to Mr. Blair who determined it as *A. bifoveatus* Geo. R. Waterhouse.

Pedonoeces pubescens Geo. R. Waterhouse.

One specimen collected on Tower Island, April 28.

This specimen agrees with the description of the type from Chatham Island, in most of the essential points, but the color is more pitchy brown than piceous black and the antennae and legs are ferruginous instead of piceous black.

Trox suberosus Fabricius.

One specimen, Conway Bay, Indefatigable Island, April 1.

Neither this genus nor species has heretofore been listed from these islands. The species has been recorded from North, Central, and South America, also from the West Indies and the Cape Verde Islands.

Trox seymourensis sp. nov.

Oblong-ovate, brownish black. Clypeus subangulate at the middle. Pronotum with surface roughly outlined, about one-third broader than long, sides curved and with an indentation near the basal angles, apex narrower than the base, apical margin produced at the sides, disk with an impression at each side which begins at the apical margin and extends obliquely from the apical angle to near the basal margin; central portion impressed. Scutellum longer than wide, sides subparallel, apex rounded. Elytra each with four rows of elongate tubercles slightly separated, thus forming interrupted carinae, intervals with three more or less interrupted rows of rounded tubercles, setae very short

and sparse, being visible only under a high-power lens. Front femora broad basally, inner portion somewhat coarsely punctate and with a somewhat dense mat of brown hairs on the basal two-thirds, outer portion coarsely granulate-punctate, lateral margins fringed with stiff, bristle-like hairs, those on the outer margin arising from somewhat deep-set punctures. Front tibiae with a somewhat large median tooth and with two smaller tooth-like projections on the basal half, the projection nearest the median tooth being the larger. Middle and hind legs more or less coarsely punctured and with a row of bristles on the margins. Length 10.5 mm.

Described from one specimen collected on South Seymour, April 23.

Type No. 28062. Coll. Amer. Mus. Nat. Hist.

There is also in the collection one elytron taken on Tower Island, April 28, which is no doubt a fragment from a specimen of the same species.

Stenodontes moliarius (Bates).

One specimen.

This species was listed by Howard as *Mallodon* sp.? The same specimens were identified by Linell as *Mallodon* (*Stenodontes*) *moliarium*, whose records are as follows: "The *Albatross* expedition in 1888 collected on Charles, Chatham, and Duncan islands seventeen examples of this large Prionid, which is distributed through Mexico and Central America to Panama."

Docema darwini sp. nov.

Oblong, subparallel. Upper surface black, glabrous, shining. Antennae yellow with apical joints slightly darker; sparsely covered with a pale yellow pubescence which becomes more dense on the apical joints. Palpi dark. Eyes somewhat coarsely faceted. Head not noticeably punctate. A median carina extends from the frontal margin of the head to slightly beyond the bases of the antennae. At the back of the head is a V-shaped excavation, the apical portion of which connects with the basal end of the carina, thus forming a Y-shaped outline with the carina as the stem of the Y. Pronotum broader than long, slightly narrowed apically, finely but not very closely punctate, lateral margins somewhat broad, antebasal impression deep and extending to near the lateral margins. Scutellum transverse. Apex broadly rounded. Elytra moderately coarsely punctate on the basal half becoming finer apically, the punctures arranged in more or less distinct rows; humeral angles somewhat prominent with a raised line extending from the umbone to the apical third; lateral margins well developed, epipleurae broad at the base, gradually narrowing and becoming obsolete at the apex. Under surface black, sparsely covered with pale pubescence. Legs brown, sparsely covered with pale pubescence; femora generally dark brown, almost black in some specimens, tibiae and tarsi paler than femora, apical tarsal joints darker in some examples. Length 2.2–2.5 mm. Described from fifteen specimens collected on Tower Island during April and one specimen from Eden, April 4. All taken on low bushes along the beach.

Type No. 28063 and *paratypes* 28064. Coll. Amer. Mus. Nat. Hist.

Pantomorus galapagoensis Linell.

One male and two females, Conway Bay, Indefatigable Island, April 1.

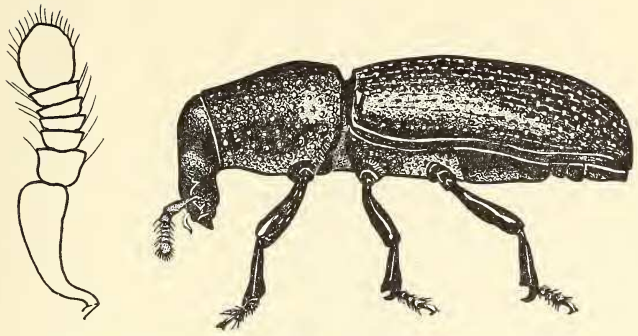

Fig. 45.--*NEOPENTARTHRUM TOWERENSIS* sp. nov.

Described by Linell from one male and three females, collected on Chatham Island. The type of this species is in the U. S. National Museum.

Neopentarthrum gen. nov.

Rostrum moderately long and somewhat broad, slightly arched, apical part at sides in front of antennae parallel; basal part slightly constricted; scrobes oblique, extending backwards to the under margins of the eyes. Antennae short, inserted in front of the middle, scape moderately short, club-shaped; funicle five-jointed, first joint thick, about as long as the second and third taken together, joints two, three, and four gradually shorter and not as thick as the first joint, the five joints with bristle-bearing punctures; club moderately large and as long as joints two, three, and four combined, pubescent, apex with two or more annulations. Eyes moderately large, situated at the base of the rostrum, convex, facets moderately coarse. Prothorax narrowed and constricted in front, more gradually narrowed behind. Scutellum small, distinct, rounded at apex. Elytra oblong, wider at base than the thorax, subparallel to apical third where they become slightly but gradually narrower, apices rounded. Legs short and stout, femora inflated, tibiae slightly triangular with prominent hooks at the apex. Tarsi with first joint somewhat elongate, second joint short, third joint deeply emarginate and a little longer than the second, claw joint about as long as the second and third combined. Body beneath slightly convex, glabrous.

I have erected this genus to include a new species, *towerensis*, of Cossoninae found in the Galapagos Islands by the Williams Expedition. There is, seemingly, no genus in the pentarthrid group which agrees with the generic characters found in this species.

Neopentarthrum towerensis sp. nov.

(Fig. 45)

Subcylindrical, piceous, shining. Antennae short and thick, scape short, clavate, funicle five jointed, first joint large; other joints closely united and gradually smaller, club slightly paler than the other part, appearing annulate under a high power. Beak moderately densely and somewhat finely punctate.

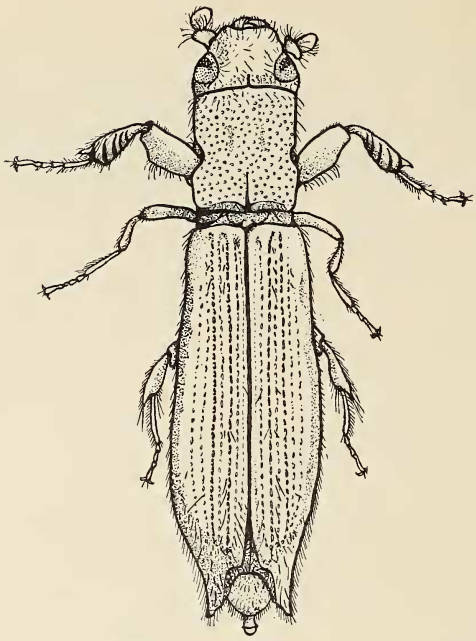

Fig. 46.—*PLATYPUS SANTACRUZENSIS* sp. nov.

Eyes situated at base of beak, small, slightly convex. Pronotum slightly longer than wide, apex constricted behind the apical margin; from this constriction the sides gradually curve outwardly to about the middle where they again gradually curve inwardly to the base; disk moderately coarsely punctate, those on the central portion being the coarser. Scutellum small, rounded at apex. Elytra slightly wider than the base of the thorax, cylindrical, surface feebly striate, striae with coarse punctures, intervals flat, each with a row of small punctures. Body beneath somewhat coarsely and sparsely punctured. Legs short, femora swollen apically; tibiae broadening apically ,apex with the usual claws; tarsi with the basal joint longer than the second, second and third about equal in length, claw joint nearly as long as the other three taken together. Front coxae narrowly separated. Length 2–2.75 mm.

Described from seven specimens taken on Tower Island, April 28. Burrowing in numbers under bark of bushes.

Type No. 28065 and *paratypes* No. 28066. Coll. Amer. Mus. Nat. Hist.

Platypus santacruzensis sp. nov.

(Fig. 46)

Male.—Elongate, cylindrical, flavous. Mandibles with apex and outer margin darker. Head slightly wider than the thorax, sparsely covered with paler hairs; front flat, sloping forward, moderately coarsely and closely granulate-punctate; basal portion smooth, median black line extending from the basal

margin to the sloping portion. Pronotum longer than wide, very finely but not closely punctate, and with a few scattered hairs along the apical and front part of the lateral margins; disk with a short basal median line. Scutellum strongly depressed and acuminate. Elytra somewhat deeply striate-punctate and with a few scattered hairs which become more closely placed at the lateral margins and at the apex; apical part dark, narrowed, sutural angle squarely truncate, lateral angle prolonged, apex tridentate. Under surface, except abdominal segments, finely and somewhat sparsely punctate, abdominal segments more closely and coarsely punctate, sparsely covered with somewhat stiff hairs. Front tarsal joint prolonged as usual in Platypodidae. Length 4.75 mm.

Described from one specimen which was collected while it was flying along the shore of Seymour Bay, Indefatigable Island.

Holotype No. 28067. Coll. Amer. Mus. Nat. Hist.

LIST OF COLEOPTERA KNOWN TO OCCUR IN THE GALAPAGOS ISLANDS

The following list contains, as far as I have been able to ascertain, all of the species of Coleoptera[4] which have been reported as being found in the Galapagos Islands. There are seventy-three species included therein, or more than twice as many as Wallace[5] recorded in his reference to the insects and land shells found in this archipelago. His remarks on the paucity of the insect fauna are as follows: "The insects are very scanty; the most plentiful group, the beetles, only furnishing thirty-five species, belonging to twenty-nine genera and eighteen families. The species are almost all peculiar, as are some genera. They are mostly small and obscure insects, allied either to American or world wide groups. The Carabidae and Heteromera are the most abundant group, the former furnishing six and the latter eight species."[6] The numerical proportions of groups are not very different in the present list but the Carabidae are fewer as, in the addition of forty forms this family has furnished only five species, or slightly more than twelve per cent. The Tenebrionidae (Heteromera of Wallace) has furnished eight additional forms, or twenty per cent of the total addition. The species which have been added to the list give us an addition of only three families (Wallace lists only eighteen families but he included, as the families are now known, three in the Malacodermes and three in the Necrophaga) but they have raised the number of genera to fifty-five, or an addition of twenty-two (some of the species listed by Wallace as belonging in one genus were found to belong in two or more genera).

There has been much discussion as to the introduction of animals on these islands, whether by land bridges or on floating masses.

---

[4] I have not considered the California Academy of Sciences material as this material has not been definitely determined.

[5] 'Island Life,' 1880. In this paper Wallace lists thirty-seven species, taken from the records of Waterhouse, 1877, Proc. Zoöl. Soc. London.

[6] Wallace did not include *Calosoma galapageium* Hope in his list of Carabidae. He also omitted *Stomion galapagoensis* Geo. R. Waterhouse, *Ammophorus galapagoensis* Geo. R. Waterhouse, *Pedonoeces costatus* Geo. R. Waterhouse and *Pedonoeces morio* Geo. R. Waterhouse in his list of Heteromera.

It is noteworthy (1) that even the present enlarged list includes but a small part of the fauna to be expected if there had been a land bridge and (2) that the habits of the species now on the islands are such as would be expected of insects that had been introduced either by floating masses or by man. In this connection the following theory expounded by Wallace may prove interesting: "The observation of Captain Collnet, quoted by Mr. Darwin in his *Journal*, that drift-wood, bamboos, canes, and the nuts of a palm, are often washed on the southeastern shores of the islands, furnishes an excellent clue to the manner in which many of the insects and land-shells may have reached the Galapagos. Whirlwinds also have been known to carry quantities of leaves and other vegetable *debris* to great heights in the air, and these might be then carried away by strong upper currents and dropped at great distances, and with them small insects, and mollusca, or their eggs." The probable introductions, if any, through the agency of man are the scavenger and wood-boring forms. The reason for including the latter here is that six conspicuous species of Cerambycidae appear to be of recent introduction, as they were not reported by the earlier writers and these beetles would almost certainly have been found, had they been there. They were probably taken over in wood which formed a part of boat's cargo or of the boats themselves.

The references to literature merely refer to the original description of the species and such papers which treat on their distribution in the Galapagos Islands. Species marked by the *asterisk* are those which are not indigenous to the Galapagos Islands.

Family CICINDELIDAE

Cicindela galapagoensis W. Horn, 1915, pp. 238, 241, 251, 397, 399 and 402. 1920, p. 17. Listed as *Cicindela* sp.? by F. X. Williams, 1907, p. 260.

Family CARABIDAE

Calosoma galapageium Hope, 1837, p. 130.

Calosoma howardi Linell, 1898, p. 251. Listed by Howard, 1889, p. 191, as *Calosoma galapagoum?* Hope.

Calosoma linelli sp. nov. Listed as *Calosoma galapageium* Hope, by Linell, 1898, p. 250.

Scarites galapagoensis Linell, 1898, p. 253.

Tachys beebei sp. nov.

Pterostichus calathoides (Geo. R. Waterhouse), 1845, p. 21. Described under the generic name of *Feronia*. Listed by Charles Waterhouse, 1877, p. 82, as *Feronia*. Howard, 1889, p. 191, listed under the generic name *Poecilus*. Linell, 1898, p. 252, listed under the generic name *Pterostichus*.

Feronia insulars Boheman, 1858, p. 14. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 255.

Notaphus galapagoensis (Geo. R. Waterhouse), 1845, p. 23. Charles Waterhouse, 1877, p. 81. Linell, 1898, p. 255.

Amblygnathus obscuricornis Geo. R. Waterhouse, 1845, p. 22. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 255.

Platynus galapagoensis (Geo. R. Waterhouse), 1845, p. 21. Described under

the generic name of *Feronia*. Listed by Charles Waterhouse, 1877, p. 82, as *Feronia*. Linell, 1898, p. 252, lists it under the generic name of *Platynus*.

Selenophorus galapagoensis Geo. R. Waterhouse, 1845, p. 22. Charles Waterhouse, 1877, pp. 77 and 82. Howard, 1889, p. 191. Linell, 1898, p. 254.

Family DYTISCIDAE

Copelatus galapagoensis Geo. R. Waterhouse, 1845, p. 23. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 255.

* *Thermonectes basilaris* (Harris), 1829, p. 8. Listed by Charles Waterhouse, 1877, pp. 77 and 82, as *Acilius incisus* Aubé var.

* *Eretes sticticus* (Linnaeus), 1766, p. 666. Listed by Charles Waterhouse, 1877, pp. 77 and 82, as *Eunectes occidentalis* Erichson. Sharp, 1882, p. 699, lists it as *Dytiscus sticticus*.

Family HYDROPHILIDAE

* *Tropisternus lateralis* (Fabricius), 1775, p. 228. Geo. R. Waterhouse, 1845, p. 26. Charles Waterhouse, 1877, pp. 78 and 82. Linell, 1898, p. 255.

Philhydrus species? Geo. R. Waterhouse, 1845, p. 26. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 255.

Family SILPHIDAE

Acribis serrativentris Charles Waterhouse, 1877, pp. 78 and 82.

Family STAPHYLINIDAE

Bledius aequatorialis sp. nov.

* *Creophilus villosus* (Gravenhorst), 1802, p. 160. Geo. R. Waterhouse, 1845, p. 24, as *Creophilus* sp. Charles Waterhouse in 1877, p. 82, records the species as *villosus*. Linell, 1898, p. 255, not knowing of the Waterhouse article, says: "This is probably *Creophilus villosus* Gravenhorst, introduced from North America."

Family MELYRIDAE

Ablechrus flavipes Charles Waterhouse, 1877, p. 79. [Listed by Charles Waterhouse, 1877, p. 81, as *Ablechrus darwinii*.]

Family CORYNETIDAE

* *Necrobia rufipes* (De Geer), 1775, p. 165. Geo. R. Waterhouse, 1845, p. 26 and Charles Waterhouse, 1877, p. 81, refer to the genus as *Corynetes*. Linell, 1898, p. 257.

Family OEDEMERIDAE

Oxacis galapagoensis Linell, 1898, p. 266.

Alloxacis seymourensis sp. nov.

Family ELATERIDAE

Anchastus galapagoensis Geo. R. Waterhouse, 1845, p. 25. Charles Waterhouse,

1877, p. 82. Linell, 1898, p. 256. [Described by Geo. R. Waterhouse and listed by Charles Waterhouse and Linell under the generic name *Physorhinus*.]

Heterocrepidius puberulus Boheman, 1858, p. 66. Linell, 1898, p. 256.

Coptostethus williamsi sp. nov.

Family DERMESTIDAE

* *Dermestes carnivorus* Fabricius, 1775, p. 55. Linell, 1898, p. 256.

* *Dermestes vulpinus* Fabricius, 1781, p. 64. Geo. R. Waterhouse, 1845, p. 26. Charles Waterhouse, 1877, p. 81. Linell, 1898, p. 256.

Family PHALACRIDAE

Phalacris darwinii Charles Waterhouse, 1877, pp. 78 and 82.

Family COCCINELLIDAE

Scymnus galapagoensis Geo. R. Waterhouse, 1845, p. 41. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 256.

Family ALLECULIDAE

Lobopoda galapagoensis Linell, 1898, p. 266. This species was listed by Howard, 1889, p. 192, with the following remark: "Two specimens of a species *Allecula* probably new from Charles Island."

Family TENEBRIONIDAE

Stomion galapagoensis Geo. R. Waterhouse, 1845, p. 29. Charles Waterhouse, 1877, pp. 79 and 82. Howard, 1889, p. 192. Linell, 1898, p. 262. [According to determinations made by Mr. K. G. Blair *Stomion piceum* Linell, 1898, p. 262, and *Stomion carinipenne* Linell, 1898, p. 262, also belong to this species.]

Stomion bauri Linell, 1898, p. 263.

Stomion helipioides Geo. R. Waterhouse, 1845, p. 30. Charles Waterhouse, 1877, p. 82. Howard, 1889, p. 192. Linell, 1898, p. 263.

Stomion laevigatum Geo. R. Waterhouse, 1845, p. 30. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 263.

Ammophorus galapagoensis Geo. R. Waterhouse, 1845, p. 30. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 263.

Ammophorus bifoveatus Geo. R. Waterhouse, 1845, p. 31. Charles Waterhouse, 1877, p. 81. Howard, 1889, p. 192. Linell, 1898, p. 263 [and in error as *A. obscurus* on p. 264].

Ammophorus cooksoni Charles Waterhouse, 1877, pp. 80 and 82.

Ammophorus caroli Linell, 1898, p. 264. [This species is without much doubt synonymous with *cooksoni*.]

Ammophorus obscurus Geo. R. Waterhouse, 1845, p. 32. Charles Waterhouse, 1877, p. 82. [The Linell record of this species, based on the determination made by Mr. K. G. Blair, has been credited to *A. bifoveatus*.]

Pedonoeces galapagoensis Geo. R. Waterhouse, 1845, p. 35. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 265.

Pedonoeces costatus Geo. R. Waterhouse, 1845, p. 35. Linell, 1898, p. 265.

Pedonoeces morio (Boheman), 1858, p. 92. [Described under the generic name of *Tessaromma*.] Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 265.

Pedonoeces pubescens Geo. R. Waterhouse, 1845, p. 36. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 265.

Pedonoeces bauri Linell, 1898, p. 265.

* *Gnathocerus cornutus* (Fabricius), 1798, p. 51. Linell, 1898, p. 266.

Phaleria manicata Boheman, 1858, p. 92. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 266.

Family BOSTRICHIDAE

* *Tetrapriocera longicornis* (Olivier), 1790, p. 15. Howard, 1889, p. 191, Lists this species with the following note: "One specimen of *Tetrapriocera* was collected on Indefatigable Island. Although the same habitus it is probably different from our Florida species, *T. longicornis* Oliv., which is known to have a wide distribution in Central and South America." Linell, 1898, p. 256.

* *Amphicerus cornutus* (Pallas), 1772, p. 18. Linell, 1898, p. 256, as *A. punctipennis*.

Amphicerus cornutus subspecies *galapaganus* Lesne, 1910, pp. 183–186. The first record of the representatives of this species was based on three specimens found by Charles Darwin on the dead branches of a Mimosa tree in Chatham Island. They were listed by Geo. R. Waterhouse, 1845, p. 36, as belonging in the genus *Apate* but no specific designation was given to them. This same series of specimens was later recorded by Charles Waterhouse, 1877, p. 82, as *Bostrichus unicantus* with a footnote, referring to the above, which reads as follows: "The *Apate* mentioned by Waterhouse, Ann. and Mag. Nat. Hist., 1845, XVI, p. 36." Linell, 1896, p. 256, not knowing of the determination by Charles Waterhouse, combined the records of Darwin's specimens with a specimen collected by Dr. G. Baur on Albemarle Island, which Linell determined as *Amphicerus punctipennis* = *cornutus*. The Darwin specimens were later studied by Lesne, who described them as *Schistoceros* = *Amphicerus cornutus* subspecies *galapaganus*. In his description of this new form Lesne says that he has not seen the specimen collected by Dr. G. Baur but has studied the four (2 male and 2 female) specimens [Waterhouse lists only three specimens] collected by Darwin. In his article Lesne makes no mention of Charles Waterhouse's determination of the species.

The specimen collected by Dr. G. Baur may also belong in this subspecies but, as it has not been determined as such, I have followed Linell and listed it as *cornutus*.

Family SCARABAEIDAE

Copris lugubris Boheman, 1858, p. 42. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 258.

Parapseudoryctes galapagoensis (Geo. R. Waterhouse), 1845, p. 26. Charles Waterhouse, 1877, p. 82. Howard, 1889, p. 191. Linell, 1898, p. 258,

described the genus *Pseudoryctes* for this species, the former authors having listed it under the genus *Oryctes*. I have herewith changed the generic name to *Parapseudoryctes* as the name *Pseudoryctes* is a homonym, it having been used by Sharp (1873, Rev. et Mag. Zool., (3) I, p. 267) for species found in Australia, which are not congeneric with the Galapagos forms.

* *Trox suberosus* Fabricius, 1775, p. 31. [The record which I have embodied in this paper is, to my knowledge, the first from these islands.]

Trox seymourensis sp. nov.

Family PASSALIDAE

* *Neleus tlascala* Percheron, 1835, p. 45. Linell, 1898, p. 257.

Family CERAMBYCIDAE

* *Stenodontes moliarius* (Bates), 1879, p. 9. Howard, 1889, p. 191, as *Mallodon* sp.? Linell, 1898, p. 259, under the generic name *Mallodon*.

Achryson galapagoensis Linell, 1898, p. 259.

Eburia lanigera Linell, 1898, p. 259.

Eburia bauri Linell, 1898, p. 260.

Eburia amabilis Boheman, 1859, p. 150. Charles Waterhouse, 1877, p. 82. Howard, 1889, p. 192. Linell, 1898, p. 261.

Acanthoderes galapagoensis Linell, 1898, p. 261.

Family CHRYSOMELIDAE

Docema galapagoensis Geo. R. Waterhouse, 1845, p. 39. Described as *Haltica galapagoensis*. Charles Waterhouse, 1877, pp. 81 and 82. [In this paper Charles Waterhouse erects the genus *Docema* for this species.] Linell, 1898, p. 262, not knowing of the Charles Waterhouse paper, lists the species under the genus *Haltica*.

Docema darwini sp. nov.

Longitarsus lunatus Charles Waterhouse, 1877, p. 81.

Diabrotica limbata Charles Waterhouse, 1877, pp. 81 and 82.

Family PLATYSTOMIDAE

Ormiscus variegatus Geo. R. Waterhouse, 1845, p. 37. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 268.

Family CURCULIONIDAE

Otiorhynchus cuneiformis Geo. R. Waterhouse, 1845, p. 38. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 267.

Pantomorus galapagoensis Linell, 1898, p. 268. [This species was listed but without a name by Howard 1889, p. 192, with the following remark: "Three specimens belonging to this family [Curculionidae] were collected on Chatham Island."]

Anchonus galapagoensis Geo. R. Waterhouse, 1845, p. 39. Charles Waterhouse, 1877, p. 82. Linell, 1898, p. 268.

Neopentarthrum towerensis sp. nov.

Family PLATYPODIDAE

Platypus santacruzensis sp. nov.

Family SCOLYTIDAE

Linell, 1898, p. 268, records a single specimen without elytra, belonging in the group Hylurgi.

This is one of the series of scientific papers of the Harrison Williams Galapagos Expedition, under the directorship of William Beebe, sent out by the Department of Tropical Research of the New York Zoological Society. The general account and narrative of the expedition, together with the natural history and photographs of the fauna, are embodied in a volume by William Beebe, published by G. P. Putnam's Sons, under the auspices of the Zoological Society. Its title is "Galapagos; World's End."

BIBLIOGRAPHY

Bates, H. W.
1879 'Biol. Centr. Amer. Coleoptera,' V, [1879–1886].

Boheman, C. H.
1858 and 1859. 'Kongliga Svenska Fregatten Eugenies,' Zoologi I, Insecta, [1858–1868].

De Geer, Carl.
1775 'Memoirs pour servir à l'historie des Insectes,' V.

Fabricius, J. Christ.
1775 'Systema Entomologie.'
1781 'Spec. Ins.,' I.
1798 'Suppl. Ent. System.'

Gravenhorst, J. L. C.
1802 'Coleoptera Microptera Brunsvicensia.'

Harris, T. W.
1829 'New England Farmer.'

Hope, F. W.
1837 Trans. Ent. Soc. London, II.

Horn, Walther.
1915 'Genera Insectorum,' fasc. 82c.
1920 Arkiv för Zoologi, XIII, No. 11.

Howard, L. O.
1889 Proc. U. S. National Museum, XII, [1890].

Lesne, P.
1910 Bulletin du Muséum d'Histoire Naturelle, XVI.

Linell, Martin.
1898 Proc. U. S. National Museum, XXI, [1899].

Linnaeus, C.
1766 'Systema Natura,' 12th Ed., I, part 2.

Olivier, G. A.
1790 'Entomologie,' IV, No. 77.
Pallas, Peter S.
1772 'Specilegia Zoologica,' fasc. 9, [1767–1774].
Percheron, A.
1835 'Monographie des Passales.'
Sharp, David.
1882 Trans. Royal Dublin Soc., (2) II, [1880–1882].
Waterhouse, Charles.
1877 Proc. Zoöl. Soc. London.
Waterhouse, Geo. R.
1845 Ann. Mag. Nat. Hist., XVI.
Williams, F. X.
1907 Entomological News, XVIII.